

FIG. 1A

5'-GATCCTCAGAAAATTATTTTAAATTTCCAATTGACATTGTGAGCGGATAACAATATAATGTGTGGA

UP element

-35 element

Lac operator

-10 element

FIG. 1B

5'AGAAAGCAAAAATAAATGCTTGACACTGTAGCGGGAAGGCGTATA
ATGGAATTGTGAGCGGATAACAATTCACA 3'

FIG. 1C

ACTCGCGGA TCATCTTCAC CATCGGCCGC AACTCCTGCG
GGATATCCTC GTCCTCCTCC TCCACCGGCA CCCCCATGGT AGCGGCCAGC
TCGCGCCCTG CCTGGGAAAG CTGTACATGC TGATCGGCGG CGTCGGTGCC
GGCGGCCGGG TCTTCCGCCT GCTCGGCGGT GCCGGTCCGT GCGGCCTTGG
CGTCCGCGGC GCGCGCGGAT GAGGGCGGCA CCTGGGTGGT GATCCAGCCA
CTGAGGGTCA ACATTCCAGT CACTCCGGGA AAAATGGAAT TCTTCCATTG
GATCGGCCCA CGCGTCGCGA ACTTGAGCCC CCTTTTCGTC GCCCCTTGAC
AGGGTGCGAC AGGTAGTCGC AGTTGTTTGA CGCAAGTCAC TGATTGAAAA
CGCCATCGGC CTGTCAGAAA TGGTCGTTGCC AGACCTATGG CTGGCACCCG
CATCGCGGCT GCGTTACCCT TACTCCTGTT GTGCCTTTAA CCTAGCAAGG AC

FIG. 1D

AATTCCTCGA AGTCCTTGCG CTGCTTGTCG TTCATGATGT
CGTAGATCAG CGCATGCACC TGCTTGTGTT CCAGCGGTGG CAGGTTGATC
CGGCGTACAT CGCCATCCAC CCGGATCATG GGTGGCAGGC CGGCGGAGAG
GTGCAGGTCC GAAGCGCCCT GTTTGGCACT GAAGGCGAGC AGCTCGGTAA
TATCCATGGG ACTCCCCAAT TACAAGCAAG CAGGTAGAAT GCCGCCAAAG
CCGCCGTCTC GGACAAGGAA AACACCGGAT GAGCCAGGGT GCTTCCAGGA
CACGCGTGGT GTCCTGCGCC AGACGCGGAA CCTCGACACT GGAACAGGAA
GATGGCCATC GAGGCCGGCG GTTTCGAGGG CGTCGAGCCG ACGCCGACCG
CACTTCCATA GGGCGCAGGT AATGTCCACG ATAGCAGAGA ATATTGCAAA
GGTTGCCGCG CGCATCCGTG AGGCAGCGCA AGCTGCGGGG CGCGATCCGG
CCACGGTCGG CCTGCTCGCC GTGAGCAAGA CCAAGCCCGC CGCCGCGGTG
CGCGAGGCGC ACGCCGCCGG CCTTCGCGAC TTCGGCGAAA ACTACCTGCA
GGAGGCCCTC GGCAAGCAGG CCGAACTGGC CGACCTGCCC TTGAACTGGC
ACTTCATCGG CCCCATCCAG TCGAACAAGA CGCGGCCCAT CGCCGAGCAT
TTCCAGTGGG TGCACTCGGT GGACCGGTTG AAGATCGCGC AGCGCCTGTC
GGAGCAACGC CCGGCCGGGC TGCCGCCCTT GAATGTCTGC CTGCAGGTCA
ACGTCAGCGG CGAAGCCAGC AAGTCCGGCT GCGCCCCCGA GGACCTGCCG
GCCCTGGCCG AGGCCGTGAA GCAACTGCCC AACCTCCGAT TCGGTGGCCT
GATGGCCATC CCCGAACCCA CCGCCGAACG CGCCGCGCAA CACGCCGCGT
TCGCCCCCTT GCGCGAACTG CTGCTGGACC TGAACCTTGG CCTGGACACC
CTGTCCATGG GCATGAGCGA CGACCTCGAG GCAGCCATCGG CGAAGGTGCG
ACCTGGGTCC GCATCGGTAC CGCCCTGTTC GGCGCCCGCGA CTACGGCGCG
CCGGCTTCTT GAATGAATCCC

FIG. 1E

CTAGAGCTAT TGATGTGGAT CAACATTGTC CACTAGCCGC
TGCCGCCTAA TCTCCAGAAT TGTGAG

FIG. 1F

1 ttatttagca ggaataatta gccagattat cgaggaggtt ccagggaatccaaacattg
 61 ttatatatgc atttataaaa tttcaagat aatttattat tcatacccttgccctttgtt
 121 tcaaaattat gccctttttt tgccttgga aacaaccaca ctctaaattaataggtgtt
 181 gtggtttgat catttataat ataacataaa aacaaccacc cagtaactagtatgagtggc
 241 gtagcgacta taacaactct atgttatcaa gatatatgta tatgagtgatgacaaggaag
 301 atgtctcctg tgagaccaac agccagatat atggcctctt gccgggctatatagttcact
 361 cctactatat acacatgtaa ttataacata aaaaaataga caagtaccgaagtacctgcc
 421 taaataacaa caagattaac atgtgaataa tggaaataaa aagtcagcccgaaggctaac
 481 ttacgaatag atgaaaattt gaacacattg ctgtgtctaa aatgattatagcataataa
 541 cgaatatttc cagctcgaaa ttaatatatt gtaataataa tttttatatctttgttaat
 601 aattatttaa ttgatttaca taaataataa ttgtaaaatt aatttgtaatcgattgcaa
 661 taagttagag gagaaaataa aatgaataaa aaactattaa caaaaacattgatagcaagt
 721 gcttagttt taacaacagt aggttcaggt ttctattctt ctcaaattataatggtatt
 781 aataacgttg aaaaagctga gcaaacgaca gataacgcat tgtggaaaaatgtaagagac
 841 gctttaaaag acgcgaatat tatcgataaa acagataatg aaaatgtcaaggttacgtat
 901 aaaatagaaa atggtggaga aaataccata gaaggaacag ttaatttagaaaatattagt
 961 actcaaaca atcctaaaat aaaccctcaa aatgttacia aaattaatataactagaaaa
 1021 aatccgaact accctaatat tgatgctaata aatacatgga aaaaattaccagaaaaattg
 1081 aaagaaaaaa atatagtgga acaacggcga caatgtttca atcttaagtacagaccctaa
 1141 agatgagact gtattcggtg aagtaggaga agataaatca aacgtaagcaatagatacat
 1201 caatcctaaa gatataaatg aattcaaatc actaaaaata ctttttccgaggcgagatta
 1261 ctctgcctc tttcttgaa cagtgatata ttctgatcta tgtaacactcaattacttca
 1321 gattctttac cttaacttc cttaattca ttctctcta tctctcaaaaagttgtgct
 1381 ttttgattg tgattggagt tgggcgtttt ttcacgcgt tgttcaattccttttaag
 1441 gtattctaata tctctctag tcatatcaat tgtttttta ctctcacctttagtgaat
 1501 actcttatcc ttctcttct tgcgttaatg ttgctaatta gtataaaatacatgcgccca
 1561 tatattccaa tggtaggaca ttaattctg gatttccagc tttttcataaatctattat
 1621 ctgataattt gcttaatcca atttcaagc catagcctaa attccccatccactaagtca
 1681 ttttgttca tatggtttta atctacggcc aatctcaaag atagattgaccagcgatgtt
 1741 taaagtcata ttacacggat ccacatttac gataaacata tctagttacacaatattatc
 1801 ccttactgca acacaggacg ttctcagcg taaaaaacac cactagaaagtgactttaa
 1861 gaatataact aattcaactt tatattaatt aatattctt aaatgaccactcacactttg
 1921 tttttgcta ttgtactt taaaatgtg ttgaaatct atattttttgatatagctc
 1981 cctatgtaac aaacaattt taattaatat atatttaaac aagtcaatttagagatcggt
 2041 taattcgatt catttaaata atatttatac attctatatg taaacgtttacacatttgaa
 2101 gtaaggagaa taaaaatga

FIG. 1G

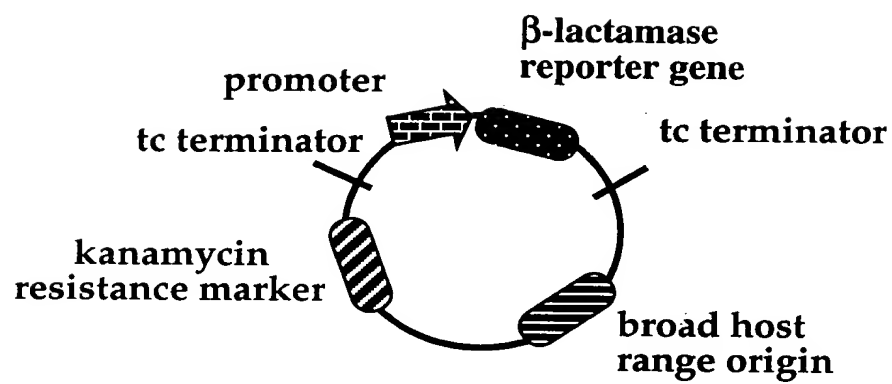


Figure ²/₂. β -Lactamase Reporter Plasmid.

FIG. 2

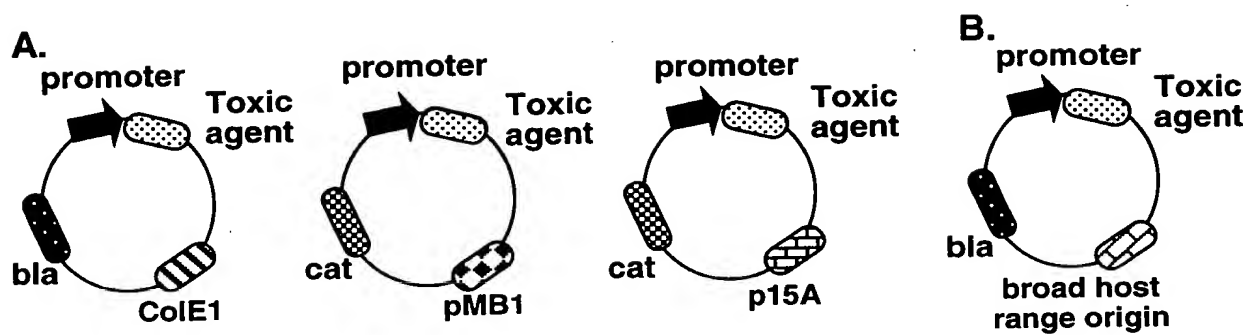


FIG. 3

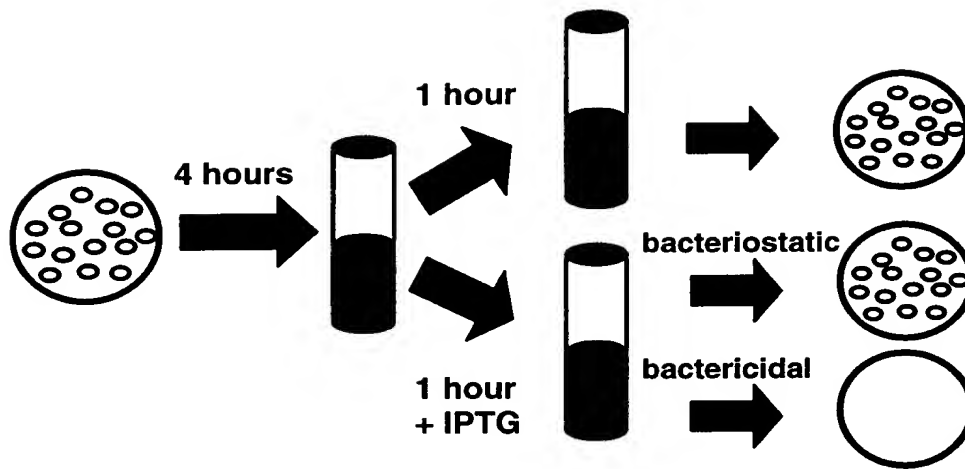


FIG. 4

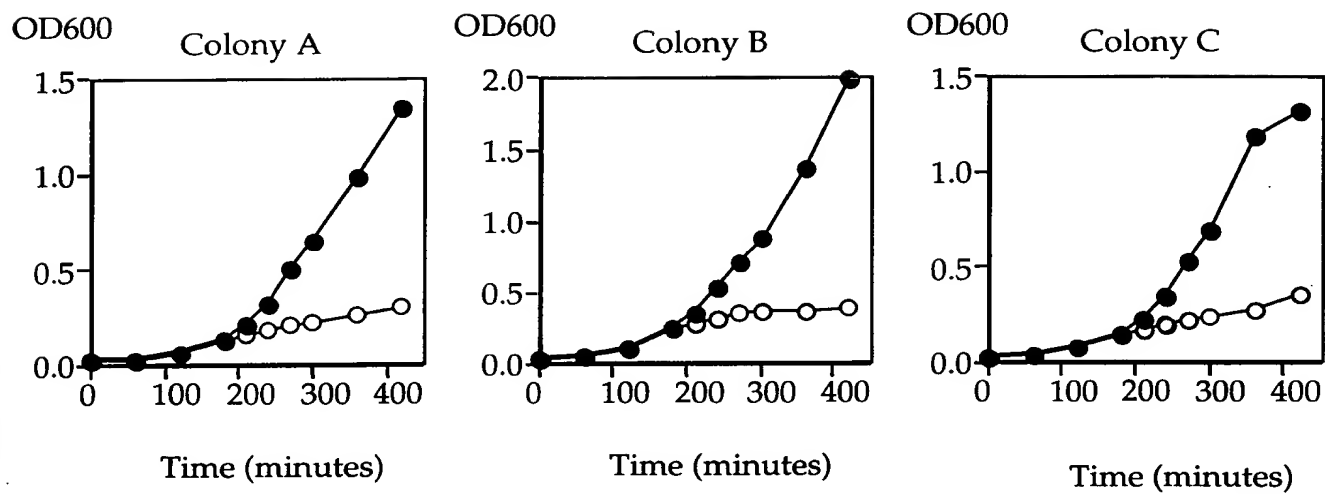
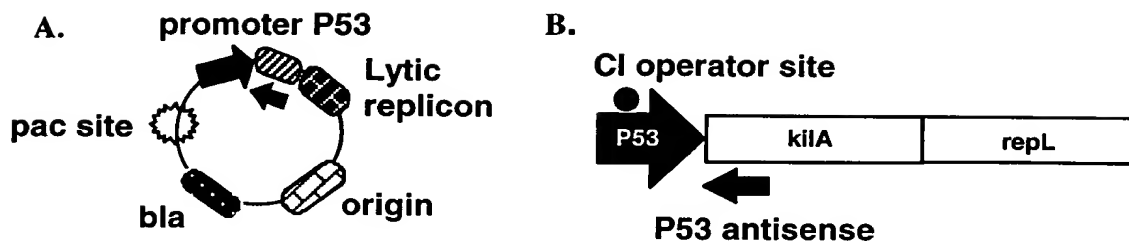


FIG. 5

**FIG. 6**

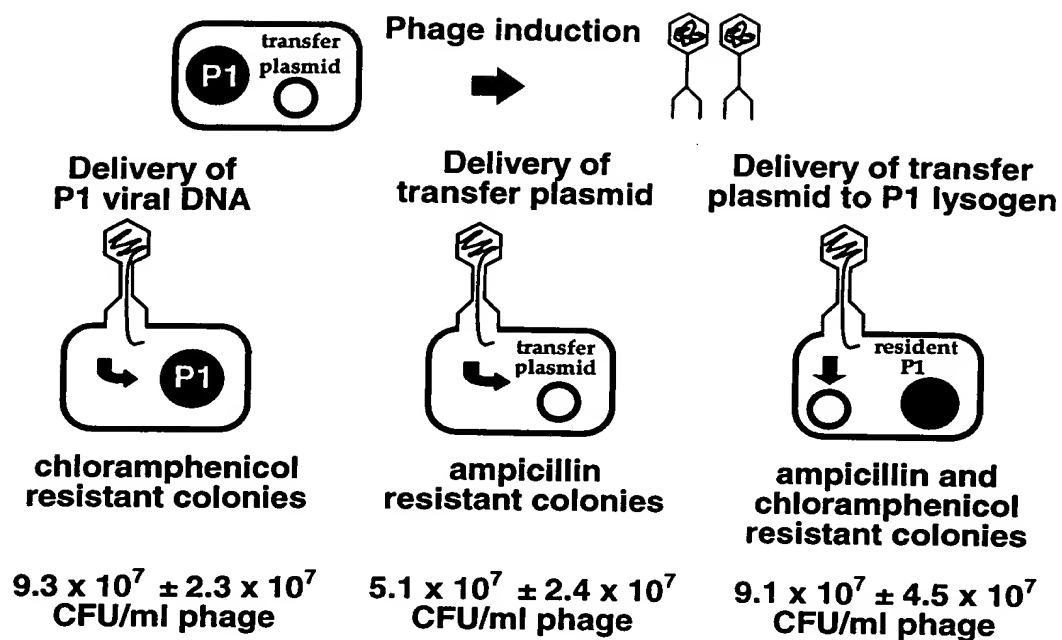


FIG. 7

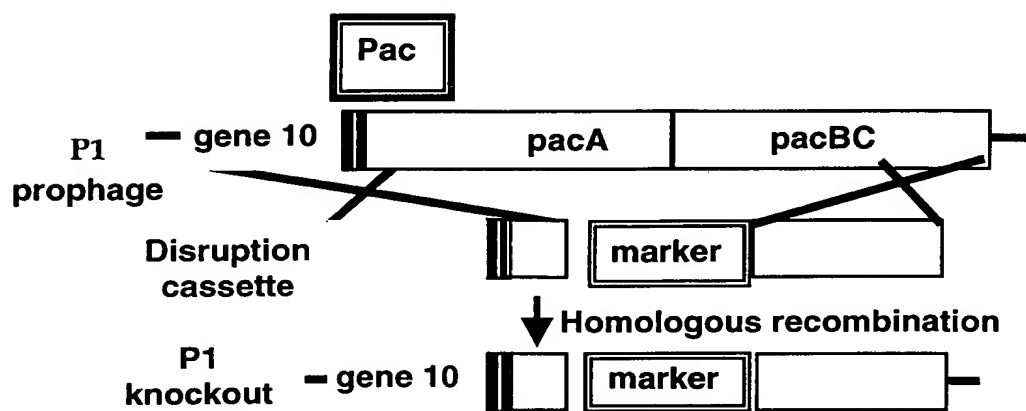


FIG. 8

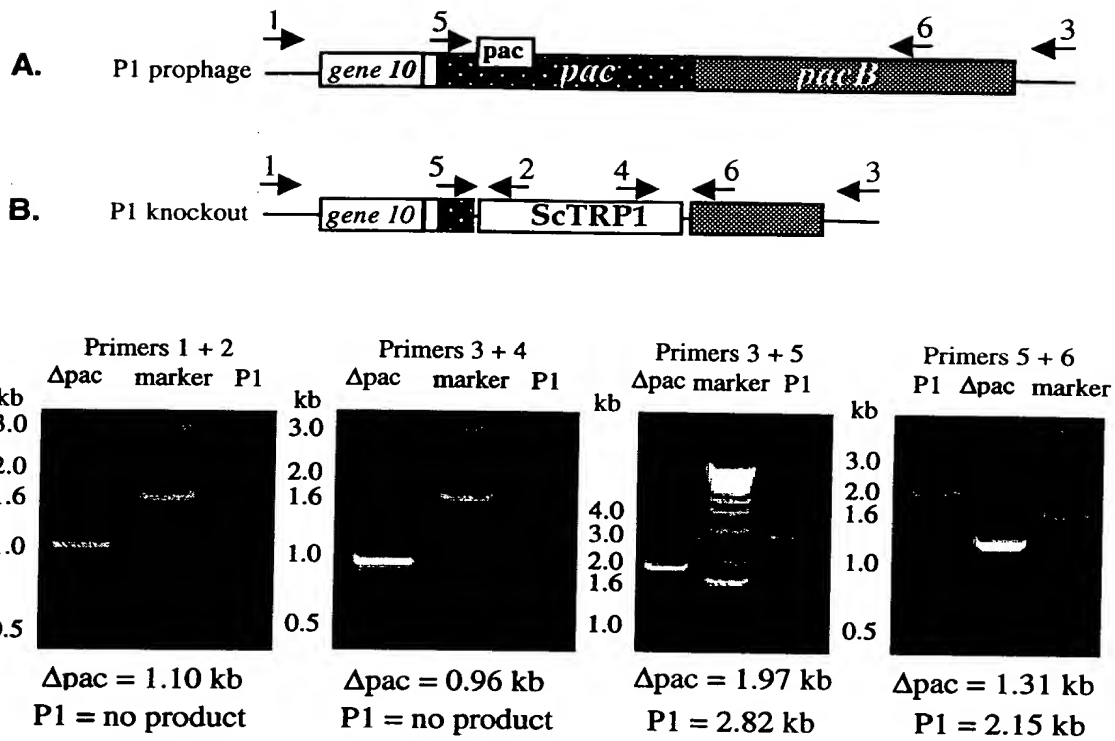


FIG. 9

PAC Deletion Complementing Plasmid

- 1) Inactivation of C1 repressor by temperature switch
- 2) Derepression of Pr94 promoter
- 3) Expression of PacABC
- 4) Production of Pacase enzymes
- 5) Cleavage of *pac* site on transfer plasmid

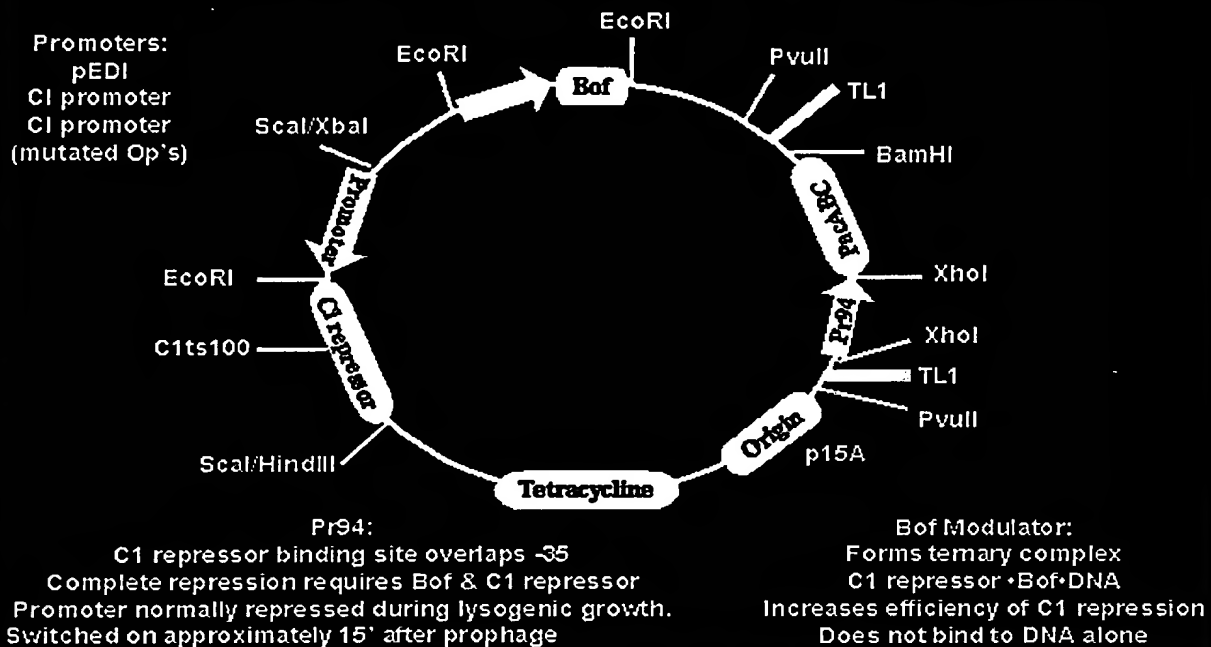


FIG.10

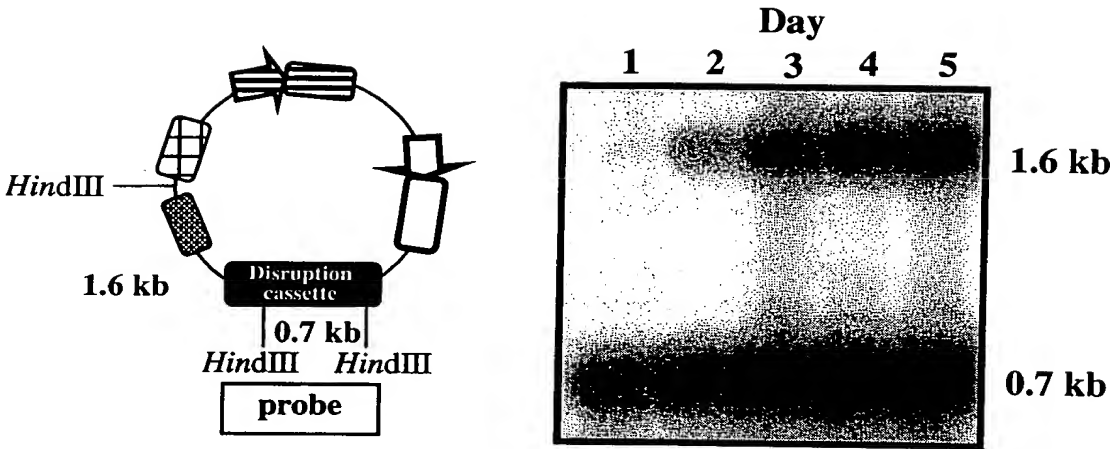


FIG.11

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FIG.12

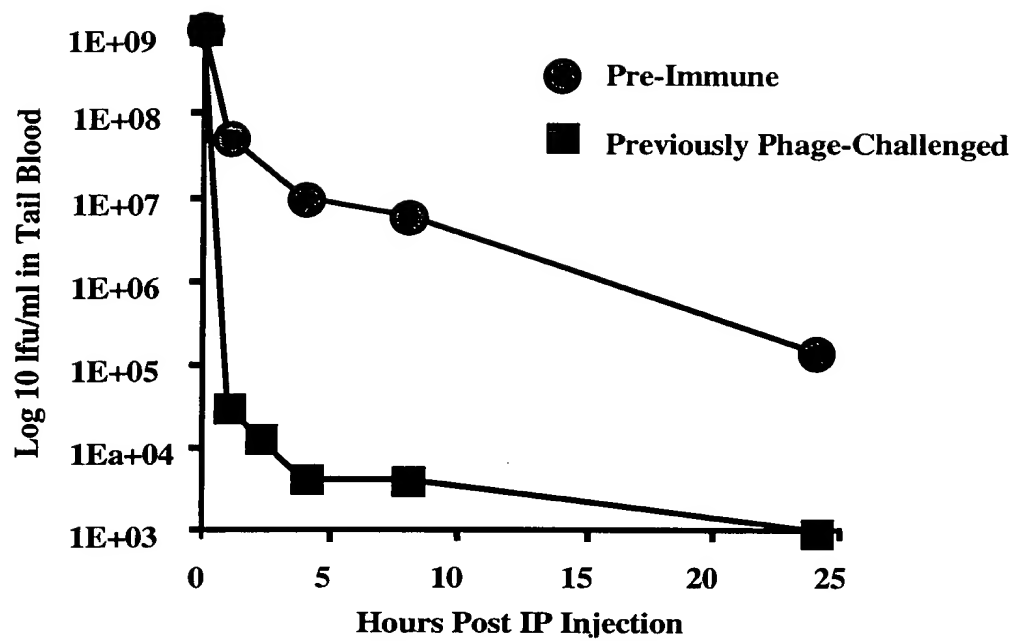
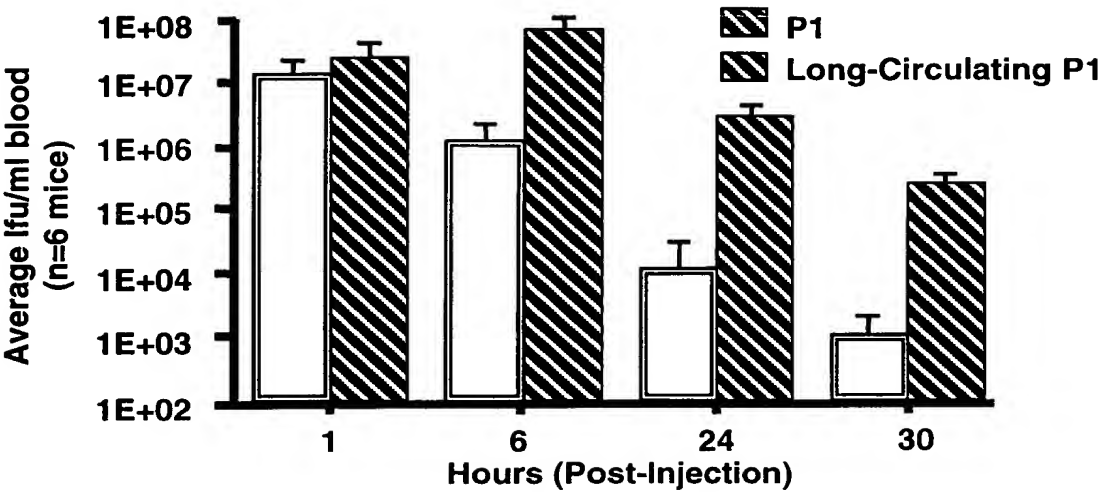


FIG.13



Hours Post-Injection	P1 (mean Ifu/ml blood)	Long-Circulating P1 (mean Ifu/ml blood)	Fold Improvement
1	1.29E + 07	2.34E + 07	2
6	1.13E + 06	6.29E + 07	56
24	1.12E + 04	2.79E + 06	249
30	1.00E + 03	2.33E + 05	233

FIG.14

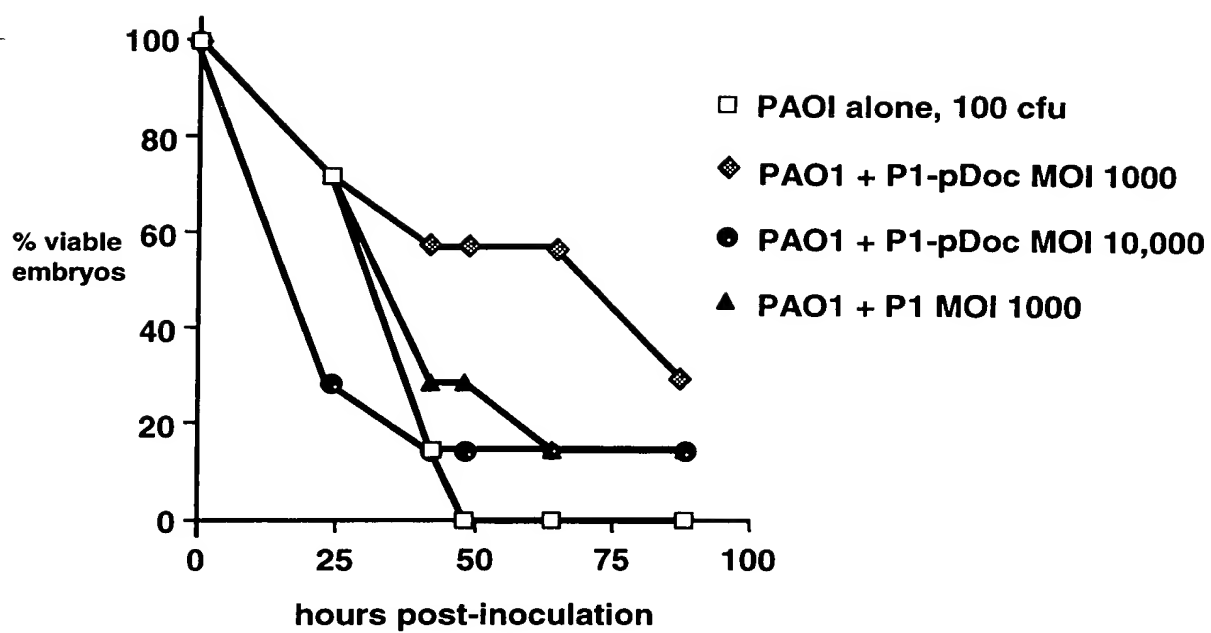


FIG.15

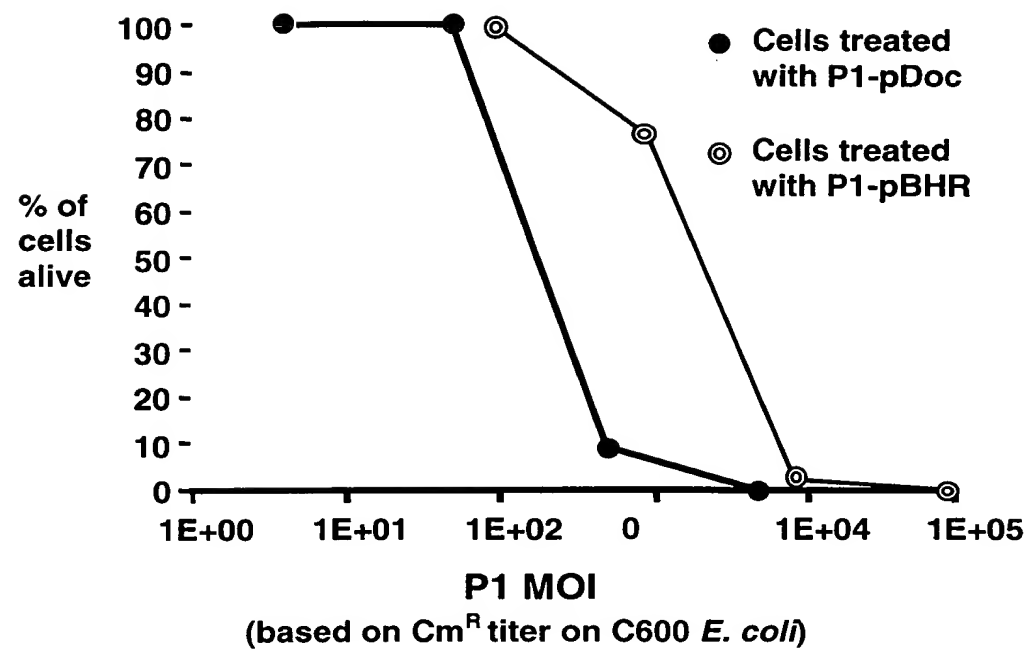


FIG. 16

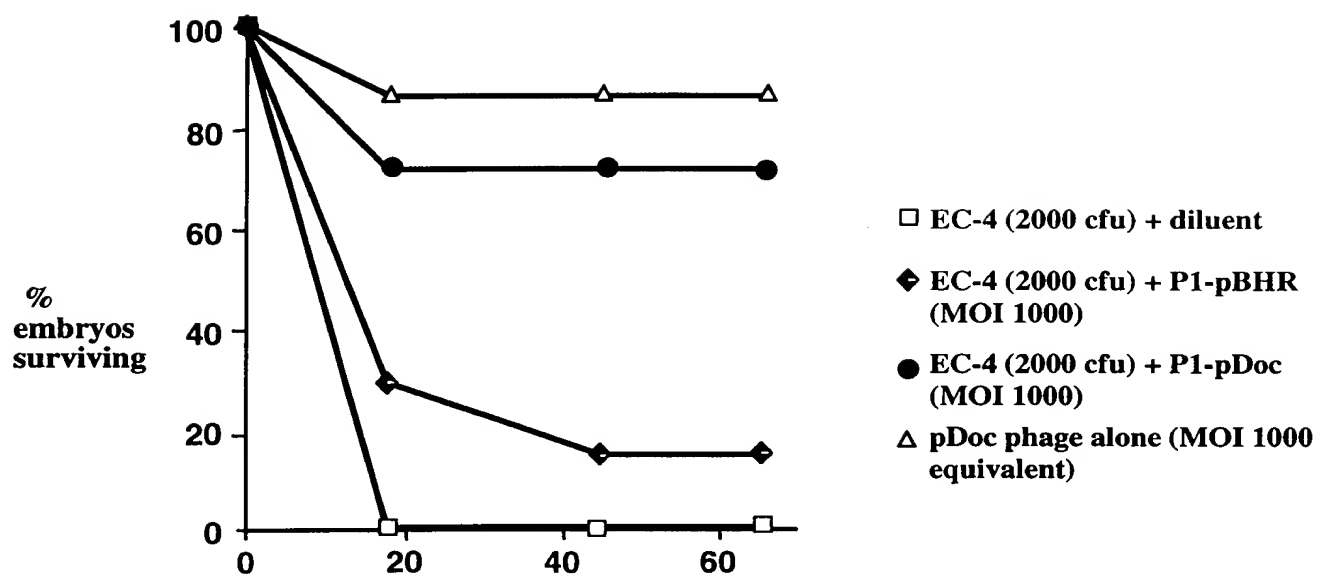


FIG. 17

FIG. 18

pClip Triple Ribozyme Structure

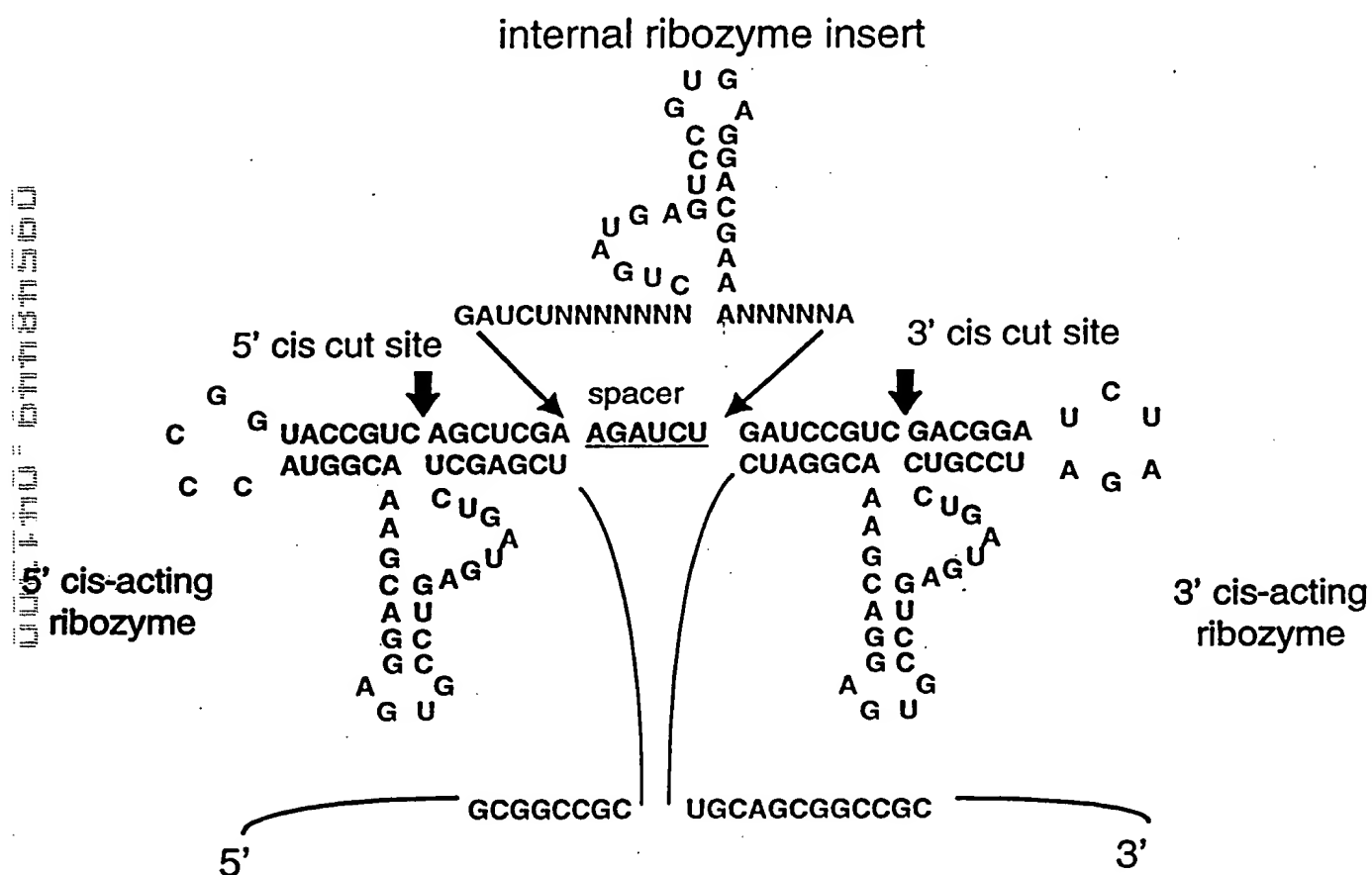


FIG. 19

pChop Triple Ribozyme Structure

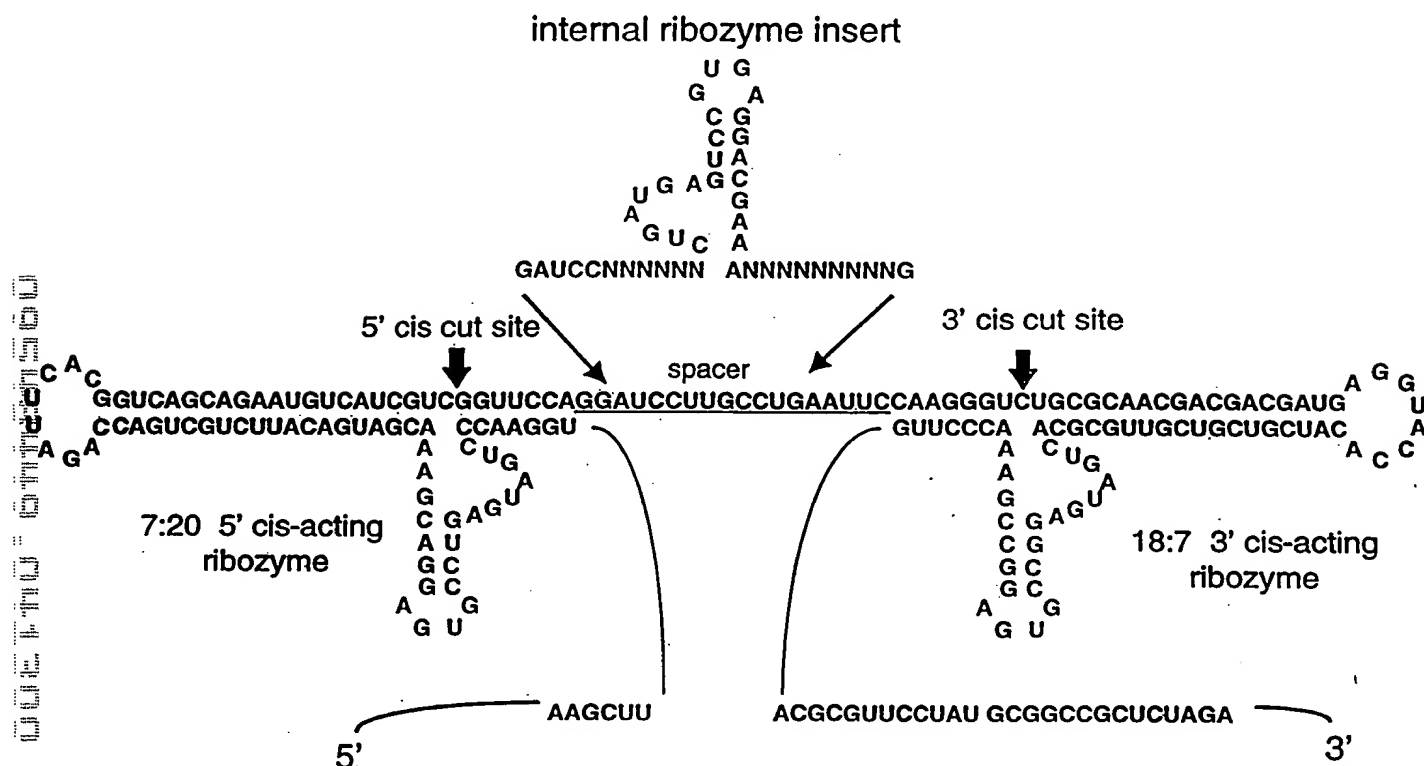


FIG. 20

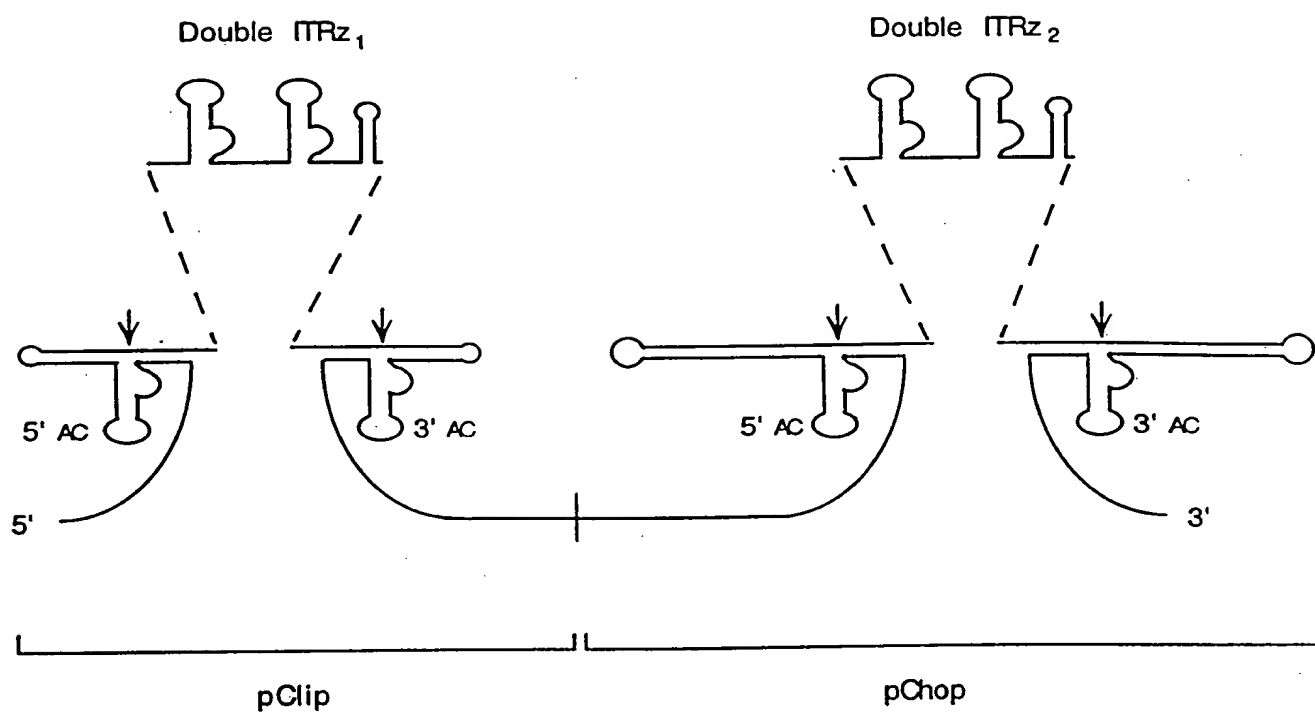


FIG. 21

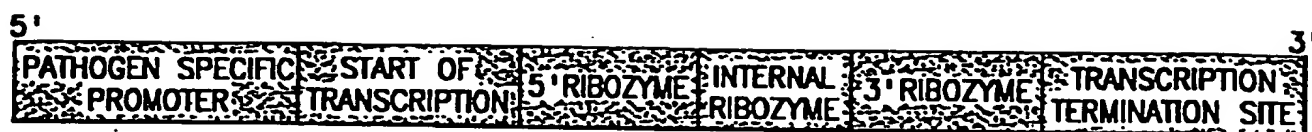


FIG. 22 A

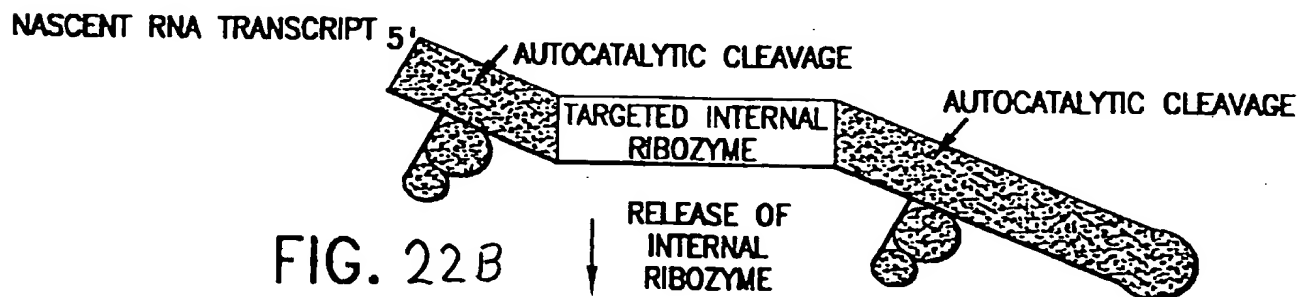


FIG. 22 B

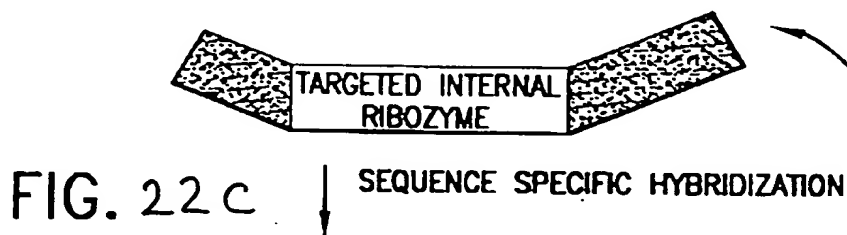


FIG. 22 C

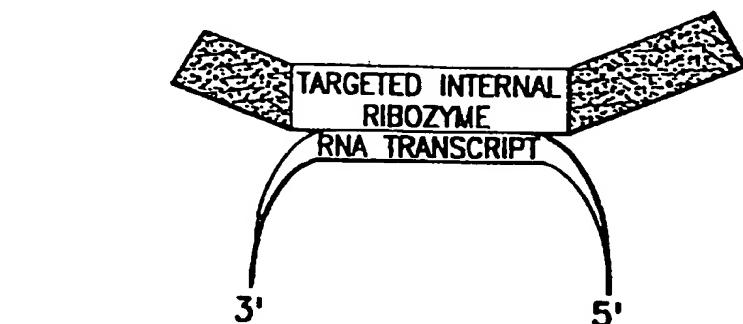


FIG. 22 D

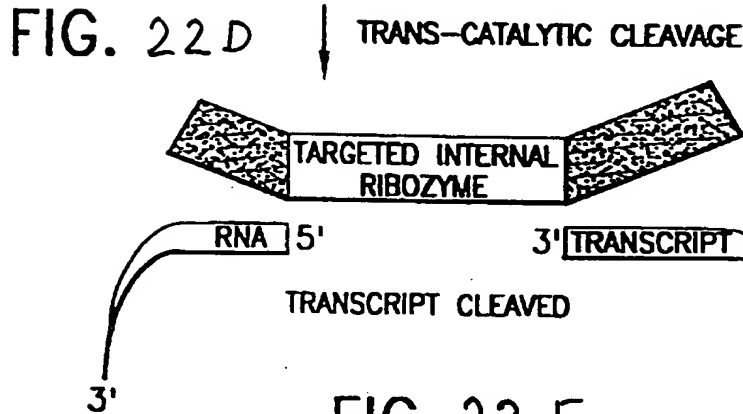


FIG. 22 E